POLLUTION CONTROL PROJECTS (PCPs)

A PCP is an activity, set of work practices, or project at an existing emissions unit that reduces air pollution. Obtaining a PCP exclusion relieves the PCP from major NSR review. The PCP exclusion may be sought when a project is installed at an existing source where it reduces the emissions rate of one air pollutant while causing an increase in emissions of a different, "collateral" pollutant. An example of such a project is the installation of a thermal incinerator, which forms NO_X as a collateral pollutant while reducing VOC emissions. For evaluating the environmental impact of a collateral emissions increase, the difference between the emissions unit's post-change actual emissions and its pre-change baseline actual emissions must be assessed. That increase is then weighed against the emissions decrease of the primary pollutant to determine whether the PCP, as a whole, provides an environmental benefit. The change must not cause or contribute to an air quality violation, may not generate emission reduction credits, and must account for any significant emissions increase of a nonattainment pollutant with offsets or SIP measures.

In order to implement the PCP exclusion, EPA has excluded the installation of qualifying PCPs--including add-on control devices, raw material substitutions, work practices, process changes and other pollution prevention strategies--from the definition of "physical or operational change" within the definition of major modification in federal regulations.

Applicability

Previously, EPA considered the installation of add-on emissions control projects, switches to less polluting fuels, and certain clean coal demonstration projects to be PCPs. The new rule expands the types of qualifying projects to include installation of additional control devices, as well as work practice standards and switches to less potent quantities of ozone-depleting substances (ODSs).

The overall impact of the listed add-on control systems is environmentally beneficial. The add-on controls in the approved list have been proven effective in reducing emissions when properly applied to existing plants. Certain pollution prevention projects--for example, fuel switches and low-NO_X burners--are also presumed to be environmentally beneficial when properly applied. Consequently, a case-by-case "environmentally beneficial" demonstration is not required for the listed PCPs, as long as they are properly applied and site-specific factors do not indicate that their application would be environmentally harmful. For non-listed PCPs, however, the process is more rigorous. In these cases, the department first must consider case-specific factors to determine whether the non-listed project results in a net environmental benefit, and then must provide an opportunity for public comment before approving the project as a PCP.

Upgrading or replacing existing emissions control equipment with a more effective emissions control project can qualify for the PCP exclusion. However, the new PCP would have to result in a level of control more stringent than the original control equipment, such as upgrading a scrubber to increase removal efficiency. Another

example would be a control device that achieves an emissions reduction equivalent to that of the original device, but is more energy efficient, such as the conversion of a thermal oxidizer to a catalytic oxidizer. As long as the catalytic oxidizer achieved emissions control equivalent to that of the thermal oxidizer, it would qualify for a PCP exclusion since it reduces energy use.

Environmental benefits.

The following projects are presumed to be environmentally beneficial:

- For control of SO_2: conventional and advanced flue gas desulfurization, sorbent injection.

- For control of particulates: electrostatic precipitators, baghouses, high efficiency multiclones, scrubbers.

- For control of NO_X: flue gas recirculation, low-NOX burners or combustors, selective non-catalytic reduction, selective catalytic reduction, low emission combustion (for internal combustion engines), oxidation/absorption catalyst.

- For control of VOC and HAP: regenerative thermal oxidizers, catalytic oxidizers, thermal incinerators, hydrocarbon combustion flares, condensers, absorbers and adsorbers, biofiltration, floating roofs (for storage vessels).

Other presumed environmentally beneficial PCPs include activities or projects undertaken to accommodate switching to less damaging ODSs, and switching to an inherently less polluting fuel (for example, switching from coal, oil, or any solid fuel to natural gas, propane, or gasified coal).

The presumption that the application of a listed PCP is environmentally beneficial is based on the understanding that the controls will be designed and operated in a manner consistent with proper industry, engineering, and reasonable practices, and that increases in collateral pollutants within the physical configuration and operational standards associated with the emissions control device or strategy are minimized. Certification of this must be included in the notification sent to the department. Because the environmentally beneficial determination is a presumption, it can be rebutted when the department determines that a particular proposed PCP project would not be environmentally beneficial. Also, this presumption does not apply when the PCP is not properly designed, operated, or maintained; the collateral pollutant emissions increases are not minimized; or the unit will be less environmentally beneficial.

Additionally, if the department determines that an otherwise listed project would not be properly constructed and operated, it may rebut the "environmentally beneficial" presumption for that application of the technology.

The PCP exclusion is not self-executing; that is, there is no presumption as to whether or not an unlisted project is environmentally beneficial. On a case-by-case basis, the department must consider the net environmental benefit of a non-listed project and

approve requests for the PCP exclusion for a specific application of the project upon a showing that it is environmentally beneficial. This approval must be received before actual construction of the PCP begins, and must be conducted through a SIP-approved permitting process, including a public comment period. This provides an opportunity for the public and EPA to review and comment on the environmental benefits analysis and the air quality impact assessment. The department's evaluation of the project's net environmental benefit is limited to air quality considerations; specifically, the air quality benefits of emissions reductions of the primary pollutant must outweigh any detrimental effects from emissions increases in the collateral pollutant, when comparing the unit's post-change emissions to its pre-change baseline actual emissions. The department's decision on a case-specific approval of a PCP exclusion does not establish that a given technology is environmentally beneficial for purposes of subsequent PCP exclusion applications for the same technology.

EPA may add unlisted control devices, work practices, and pollution prevention projects to the approved list. The technology must be reviewed by EPA to ensure that the project's overall net impact on the environment is beneficial. EPA's evaluation would hinge on the same factors as a reviewing authority's case-by-case reviews. Once listed, a subsequent project could be presumed environmentally beneficial unless case-specific factors or impacts would indicate otherwise.

Switching to a less polluting fuel or to a less potent quantity of ODS are prime examples of pollution prevention projects, and both are already listed as presumptively environmentally beneficial. However, there are far more add-on technologies that are listed as environmentally beneficial. Special care must be taken in evaluating a pollution prevention project for the PCP exclusion. Pollution prevention projects tend to depend on site-specific factors and lack a historical record of performance. This can be problematic in deciding whether they are environmentally beneficial when applied universally. Pollution prevention projects can still qualify as environmentally beneficial PCPs, but their environmental benefits must be evaluated and confirmed.

New control technologies that are demonstrated in practice may be added to the list of presumed environmentally beneficial technologies. However, EPA will not require that non-listed technologies be comparable in effectiveness on a pollutant-specific basis with the emissions reduction efficiency of currently listed technologies in order to qualify as environmentally beneficial. Additionally, the EPA Administrator is vested with the sole authority to approve non-listed pollution strategies as presumptively environmentally beneficial. The department may perform a case-specific approval of a PCP exclusion in which it would determine that a non-listed technology is environmentally beneficial, but that determination only pertains to the particular case under evaluation and would not establish that the technology is environmentally beneficial for subsequent applications.

Calculating emissions increases

In order to calculate emissions increases for primary and collateral pollutants for the purpose of determining the environmental impact of the PCP, the actual-to-projected-actual applicability test method for calculating the emissions increase must be used.

Cross-media impacts.

By definition, a PCP reduces emissions of air pollutants subject to regulation under the Act. Therefore, while the primary environmental benefit of the PCP would be to reduce air emissions, a secondary benefit could be reducing pollution in other media. However, these cross-media tradeoffs are difficult to compare, so it is difficult to weigh their importance in appraising the overall environmental benefit of a PCP. EPA has therefore determined that it is inappropriate to consider non-air impacts when considering whether projects, activities, or work practices qualify for the PCP exclusion.

Air quality impacts.

Cause-or-contribute test.

One criterion for all PCPs is that the emissions from the PCP cannot cause or contribute to a violation of any NAAQS or PSD increment, or have an adverse effect an AQRV (such as visibility) that has been identified for a federal Class I area. This has been called the "cause-or-contribute test." Any air quality assessment for a PCP should consider all relevant AQRVs in any Class I area that are identified by the FLM at the time the source submits its notice or permit application for the project. For purposes of projects that presumptively qualify for the PCP exclusion, the consideration of AQRVs are limited to those that have already been identified by an FLM for the federal Class I area. The source should check with the National Park Service to determine if the FLM has already identified an AQRV for a nearby Class I area. If the source is required to obtain both approval from the department and a permit before beginning actual construction of the project, then additional AQRVs may be identified by an FLM.

Air quality impacts analysis requirements.

The department may require an analysis of a project's air quality impacts if it appears that the project could result in a significant emissions increase of any criteria pollutant over levels in the most recent analysis, or that the increase would cause or contribute to a violation of any NAAQS or PSD increment or have an adverse impact on an AQRV that has been identified for a federal Class I area by an FLM. The analysis must contain sufficient data to demonstrate that the new levels of emissions will not cause or contribute to a violation of the NAAQS or PSD increment, or have an adverse impact on an AQRV. If the air quality analysis shows that a resulting violation is foreseeable, the project cannot receive the PCP exclusion. Although the rule contains the core safeguard to prevent an adverse air quality impact, a modeling exercise is not necessarily warranted in all cases.

While notification of the FLM of any nearby federal Class I area is not a prerequisite for proceeding with a PCP, the source must determine whether any AQRVs have been identified in these areas. If no AQRVs have been identified for a particular Class I area, the demonstration is simply a statement that no AQRVs exist in Class I areas that the source has the potential to affect. Similarly, if there are AQRVs in nearby federal Class I areas, but the pollutants associated with these AQRVS either will not be emitted by the source or will not increase by a significant amount as a result of the PCP, then the

demonstration should indicate the lack of any association between the PCP project and the known AQRVs.

On the other hand, the source should be prepared to conduct modeling with respect to any regulated NSR pollutant that the PCP will cause to increase by a significant amount when that pollutant is associated with a known AQRV in a nearby federal Class I area. Oftentimes, a screening model may be used to estimate the ambient impacts of the increase from the facility. Special concern should be given in cases where an FLM has already identified adverse impacts for such AQRV. In such cases, the source is expected to record and consider any information that the FLM has made available concerning the adverse effects, to help determine whether the pollutant impacts from the facility have the potential to cause further adverse impacts.

If, upon receiving a notification of using the PCP exclusion, the department believes that an air quality impacts analysis is reasonably necessary, it may request more information, including additional local or regional modeling.

Projects with collateral pollutant increases of nonattainment pollutants.

The PCP exclusion is available regardless of an area's attainment status. Nonetheless, because increases in a nonattainment pollutant contribute to the existing nonattainment problem, any significant emissions increase in a nonattainment pollutant resulting from a PCP must be offset with acceptable emissions reductions.

Since less than significant collateral emissions increases (for example, less than 40 tpy of VOC in a moderate ozone nonattainment area) do not trigger major NSR, such mitigation requirements are not necessary for the PCP exclusion when the increase of the nonattainment pollutant will be below the applicable significant level. A less than significant emissions increase may, however, be subject to minor NSR requirements.

Other issues.

Generating ERCs from a PCP-excluded project.

The emissions reductions initially achieved by the PCP are integral to the "environmentally beneficial" demonstration. The emissions reductions are traded, in effect, for the significant emissions increase of the collateral pollutants and for the benefits of being excluded from the major NSR permitting requirements. To then re-use the reductions would weaken the PCP exclusion and would not ensure appropriate environmental protection. Consequently, emissions reductions that initially qualified a project for the PCP exclusion cannot be used as netting credits or offsets. However, sources are allowed to continue to use these reductions to generate allowances for purposes of complying with the title IV acid rain program.

Moreover, once a source qualifies for the PCP exclusion, it can apply for ERCs if it changes process conditions in such a way that further reduces emissions.

How the Listed PCP Technologies compare to BACT or LAER.

The list of presumed environmentally beneficial technologies contains several control strategies that do not qualify as BACT or LAER. For example, installing low-NO_X burners on large turbines would not likely constitute an acceptable BACT level. However, these projects are presumed environmentally beneficial and are eligible for the PCP exclusion from major NSR because these controls are cleaner than existing equipment without the controls. In addition, the PCP exclusion only applies to sources that are installing PCPs, and not to the installation of new emissions units or changes that increase the capacity of the unit, both of which would be potentially subject to BACT or LAER. However, being listed as environmentally beneficial does not also imply that the control technology is equivalent to BACT or LAER.

Collateral pollutant emissions.

To qualify for the PCP exclusion, the source must minimize emissions of collateral pollutants within the physical configuration and operational standards usually associated with the emissions control device or strategy. This typically occurs by inherent design of the control device that causes them. In most cases, no additional control requirements will be necessary.

"Demonstrated in practice."

New technologies must be demonstrated in practice before being added to the list, in part because this is an important element in a showing that the candidate technology is environmentally sound. The meaning of "demonstrated in practice" includes technologies demonstrated outside of the United States.

Public participation

EPA's new rules do not require any review of a PCP by the public or the department prior to use of the exclusion. Nonetheless, existing state regulations for minor NSR continue to apply to projects that qualify for the PCP exclusion and are not otherwise excluded under the state program. Minor NSR programs are designed to consider the impact these increases could have on air quality, including whether local conditions justify rebutting the presumption that a listed project is environmentally beneficial. Nothing in the rule voids or creates an exclusion from any otherwise applicable minor NSR preconstruction review requirement. Minor NSR permits may afford the public an opportunity to review and comment on the use of a PCP exclusion for a specific project (see §§ 51.160 and 51.161). Furthermore, to undertake a PCP exclusion, a source could use the title V permit revision process to officially effect the PCP exclusion. This would enable the public to review the PCP determination at that time.

Thus, the process for implementing a PCP exclusion would be similar to the other exemptions within NSR (routine maintenance, change in ownership, etc.).

Implementation

How to apply for and receive a PCP exclusion.

The process for obtaining a PCP exclusion follows one of two scenarios, depending on whether the proposed project is "listed" or "non-listed" as environmentally beneficial.

For a *listed* PCP, the source must submit a notice to the department that includes a description of project; an analysis of the environmentally beneficial nature of the PCP, including a projection of emissions increases and decreases; and a demonstration that the project will not have an adverse air quality impact. Construction on the PCP may begin immediately upon submittal of the notice to the department. However, if the department determines that the source does not qualify for a PCP exclusion, the source may be subject to a delay in the project or an order to not undertake the project.

For a *non-listed* PCP, the department will consider, case-by-case, the project's net environmental benefit. The source must receive approval of the project before beginning construction. The department will provide an opportunity for public review and comment prior to granting its approval. The application for case-specific approval of a PCP exclusion should have the same information as required for a notice to use a listed technology. The difference between the two processes is that use of a listed technology allows construction to commence on a PCP immediately after submitting the notice to the department, whereas use of a non-listed technology requires submitting an application to the department and obtaining approval prior to construction.

Adding new projects to the list of environmentally beneficial PCPs.

EPA will use notice and comment rulemaking procedures to add new projects to the list of PCPs that are presumed to be environmentally beneficial. EPA may take this action on its own initiative or they may be petitioned to add a project to the list. Petitions should describe the anticipated emissions consequence of installing the PCP, both for primary and collateral pollutants. If EPA agrees that the project should be added to the list, it will amend the list of approved PCPs.

Operational expectations for an excluded PCP.

All sources approved to use a PCP exclusion must operate the PCP in a manner consistent with reasonable engineering practices and with the basic applicability requirements for the exclusion (that is, being environmentally beneficial and having no adverse air quality impacts). This means that the source has a legal responsibility to operate in a manner that is consistent with its analysis of the environmental benefits and air quality impacts analysis, and that the source will minimize collateral pollutant increases within the physical configuration and operational standards usually associated with the emissions control device or strategy.

Implications of noncompliance.

The PCP exclusion is a mechanism for bypassing NSR permitting requirements. If the source does not comply with the steps necessary to qualify for the PCP exclusion under the terms of the PCP provisions, it can become subject to major NSR.